SOROKIN, L.I., kand. tekhn. nauk, red.; DROZDOVSKAYA, I., red.;
KHAR'KOVSKAYA, L., tekhn. red.

[Problems in reducing the noise of jet engines; collection of translations] Problemy umen'sheniia shuma reaktivnykh dvigatelei; sbornik perevodov. Moskva, Izd-vo inostr. lit-ry, 1961. 141 p. (MIRA 15:2)
(Airplanes—Jet engines)

DROZDOVSKAYA, I.S.; KONFEDERATOV, I.Ya., redaktor; LARIONOV, G.Ye., tekhnicheskiy redaktor; SKVORTSOV, I.M., tekhnicheskiy redaktor.

[Russian electric engineering periodicals, 1880-1950] Russkaia elektrotekhnicheskaia periodika (1880-1950 gg.). Moskva, Gos. energ. izd-vo, 1954. 158 p. (MLRA 7:12)
(Electric engineering--Periodicals)

ARTOBOLEVSKIY, I.I., akademik, redaktor; DROZDOVSKAYA, [illegible], redaktor; IOVLEVA, N.A., tekhnicheskiy redaktor

[Agricultural machinery construction; collection of translated articles from foreign journals] Sel'skokhoziaistvennoe mashinostroenie; sbornik perevodov statei iz inostrannoi periodicheskoi literatury. Moskva, Izd-vo inostrannoi lit-ry, 1954. 258 p. [Microfilm] (MLRA 8:3)

(Agricultural machinery)

DROZDOVSKAYA, I.S.

KOROLEV, A.V., kandidat tekhnicheskikh nauk, redaktor; DROZDOVSKAYA, I.S., redaktor; SHAPOVALOV, V.I., tekhnicheskiy redaktor

[Equipment and technology of forging and pressing industry; collection of articles from foreign scientific and technological periodical publications] Oborudovanie i tekhnologiia kuznechno-pressovogo proizvodstva; sbornik statei iz inostrannoi nauchno-tekhnicheskoi periodicheskoi literatury. Moskva, Izd-vo inostrannoi lit-ry, 1955. 278 p. (MLRA 9:3)

(Forging machinery)

ACHKERKAN, N.S., prof., doktor tekhn.nauk; DOROSHKEVICH, A.M., kand.tekhn. nauk; DROZDOVSKAYA, I.S., inzh.; KUZOVKOV, N.T., kand.tekhn.nauk; ARTOBOLEVSKIY, I.I., akademik, red.; IOVLEVA, N.A., tekhn.red.

[Automation in the machinery industry abroad; collected translations] Avtomatizatsiia v mashinostroenii za rubezhom; sbornik perevodov. Pod obshchei red. I.I.Artobolevskogo. Moskva, Izd-vo inostr.lit-ry, 1959. 321 p. (MIRA 13:4)
(Automation) (Machinery industry)

PROVAZ, Josef; KHRABAN, O.G., kand. tekhn. nauk [translator]; LINDE, D.P., kand.tekhn.nauk, red.; DROZDOVSKAYA, I.S., red.; REZOUKHOVA, A.G., tekhn. red.; IOVLEVA, N.A., tekhn. red.

[Temperature compensation of the nostability of high-frequency circuits] Temperaturnaia kompensatsiia nestabil'nosti vysokochastotnykh konturov. Pod red. D.P.Linde. Moskva, I Izd-vo inostr.lit-ry, 1960. 214 p. Translated from the Czech. (MIRA 15:7)

(Microwaves) (Electric networks) (Microwave wiring)

ARTOBOLEVSKIY, I.I., akad., red.; VLADZIYEVSKIY, A.P., prof., red.;
DROZDOVSKAYA, I.S., red.; IOVLEVA, N.A., tekhn. red.

[Automatic production lines in the machinery industry]
Avtomaticheskie linii v mashinostroenii; sbornik statei.
Moskva, Izd-vo inostr. lit-ry, 1961. 450 p.
(MIRA 15:2)
(Machinery industry) (Automation)

DROZDOVSKAYA, L., aspirantka

Fungicides on remontant carnations. Zashch. rast. ot vred. i bol. 10 no.12:32 '65. (MIRA 19:1)

1. Akademiya kommunal'nogo khozyaystva, Moskva.

30873
S/073/61/027/006/005/005
B110/B147

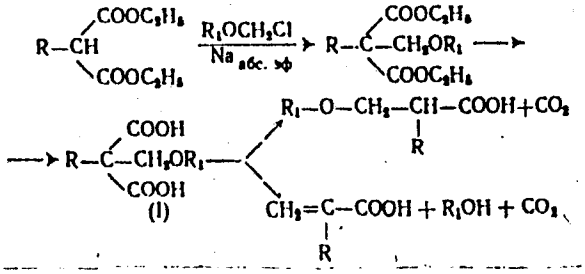
5.3400 2209

AUTHORS: Stepanova, O. S., Drozdovskaya, M. I.

TITLE: Alkyl acrylic acids and their derivatives.
II. Synthesis of α-butyl acrylic acid and its esters

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, v. 27, no. 6, 1961, 786 - 788

TEXT: The authors investigated the synthesis of α-butyl acrylic acid (I) and produced some of its derivatives:



(R = n-butyl).

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Alkyl acrylic acids and their...

Butyl malonic ester was obtained from sodium malonic ester and butyl bromide with boiling point = 92°C/3 mm Hg, n_D^{20}=1.4238, d_4^{20}=0.9756. Methoxy methyl butyl malonate (II), was produced from sodium butyl malonate and methyl chloride ethyl ether in absolute ether with boiling point 112-113°C/4 mm Hg, n_D^{20}=1.431, d_4^{20}=1.0011, MR_D=67.23 with 82% yield. (I) with the twofold amount of 33% alcohol, was heated for 3 hr with KOH. It was diluted with water, alcohol was distilled off, and methoxy butyl malonic acid (III) with 98% yield and boiling point 115°C was separated by excess H_2SO_4. III was intensively heated for a longer period. The following result was obtained by vacuum fractional distillation: (1) boiling point 94-95°C/6 mm Hg, (2) β-methoxy-α-butyl proprionic acid (IV), boiling point 121-122°C/6 mm Hg. Optimum yield of I was obtained by 12 hr heating of III at 270-280°C. 28 and 76% yield of I was obtained after 20 and 70 hr heating of II with 10-fold HCl excess (2:1). I polymerizes on standing. When it is heated, the monomer is produced. PCl_5 with I yields the anhydride of chlorine, boiling point 167-169°C. NH_3 combined with the

Card 2/4

ethereal solution of the anhydride of chlorine yielded the amide of I, melting point 69-70°C. Methyl and propyl esters of I were obtained by 6 hr heating of I with threefold alcohol excess and 10% (referred to the weight of alcohol) of concentrated H_2SO_4. Dry HCl gas whose amount was twice that of isobutyl alcohol was bubbled for 1 hr into the solution of the acid, and after 3 hr heating at 140-145°C, isobutyl ester of I was obtained. β-methoxy-α-butyl propionic acid with boiling point 121-122°C/6 mm Hg, d_4^{20}=0.9831, n_D^{20}=1.4330 is a by-product of the thermal decomposition of IV. Its ethyl ester with 86% yield, boiling point 68-69°C/6 mm Hg, d_4^{20}=0.9239, n_D^{20}=1.4230 was obtained by absolute C_2H_5OH and concentrated H_2SO_4. There are 1 table and 5 references: 3 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: J. C. Crawford, S. D. Swift, J. Chem. Soc., 1220 (1952); 2858 (1953). J. I. Simonsen, J. Chem. Soc., 93, 1774 (1908).

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B110/B147

Alkyl acrylic acids and their...

ASSOCIATION: Odesskiy gosudarstvennyy universitet im. I. I. Mechnikova (Odessa State University imeni I. I. Mechnikov)

SUBMITTED: July 4, 1960

Card 4/4

DROZDOVSKAYA, T. M. Cand Med Sci -- "Effect of [redacted] adrenocorticotropic hormone and cortin upon the course of acute intestinal obstruction." Kiev, 1961 (Min of Health UkSSR. Kiev Order of Labor Red Banner Med Inst im Academician A. A. Bogomolets). (KL, 4-61, 208)

ZORYA, V.G., kand.med.nauk (Vinnitsa, ul. Rozy Lyuksemburg, d.2/21, kv.91); DROZDOVSKAYA, T.M.

Prosthesis in cicatricial obstruction of extrahepatic biliary ducts. Klin.khir. no.9:72-74 S '62. (MIRA 16:5)

1. Kafedra obshchey khirurgii (zav. - prof. A.P. Yurikhin) Vinnitskogo meditsinskogo instituta.
(PROSTHESIS) (BILE DUCTS)

TREYMEYT, B.A., kand.med.nauk; DROZDOVSKAYA, V.S., nauchnyy sotrudnik; KOPIT, R.Z., kand.med.nauk

Treatment of trachoma with synthomycin. Oft.zhur. 13 no.7:392-395 '58. (MIRA 12:1)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta glaznykh bolezney imeni prof. Girshmana (dir. - zasl. deyatel' nauki, chlen-korr. AMN SSSR prof. I.I. Merkulov).
(CONJUNCTIVITIS, GRANULAR) (CHLOROMYCETIN)

DROZDOVSKAYA, V.S., nauchnyy sotrudnik

Influence of histamine on the permeability of eye vessels and on intraocular pressure. Oft.zhur. 13 no.7:414-419 '58. (MIRA 12:1)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta glaznykh bolezney imeni prof. Girshmana (dir.- zasl. deyatel' nauki, chlen-korr. AMN SSSR prof. I.I. Merkulov).
(EYE--BLOOD SUPPLY) (HISTAMINE)

DROZDOVSKAYA, V.S.,, Cand Med Sci -- (diss) "Role of histamine in certain eye diseases." Dnepropetrovsk, 1959, 10 pp (Min of Health UkSSR. Dnepropetrovsk State Med Inst) 200 copies (KL, 36-59, 117)

DROZDOVSKAYA, V.S., kand.med.nauk

Role of histamine in some diseases of the optic nerve. Vop. neirooft. 8:93-110 '61. (MIRA 14:9)
(OPTIC NERVE--DISEASES) (HISTAMINE)

DROZDOVSKIY, A.

DROZDOVSKIY, A., inzh.

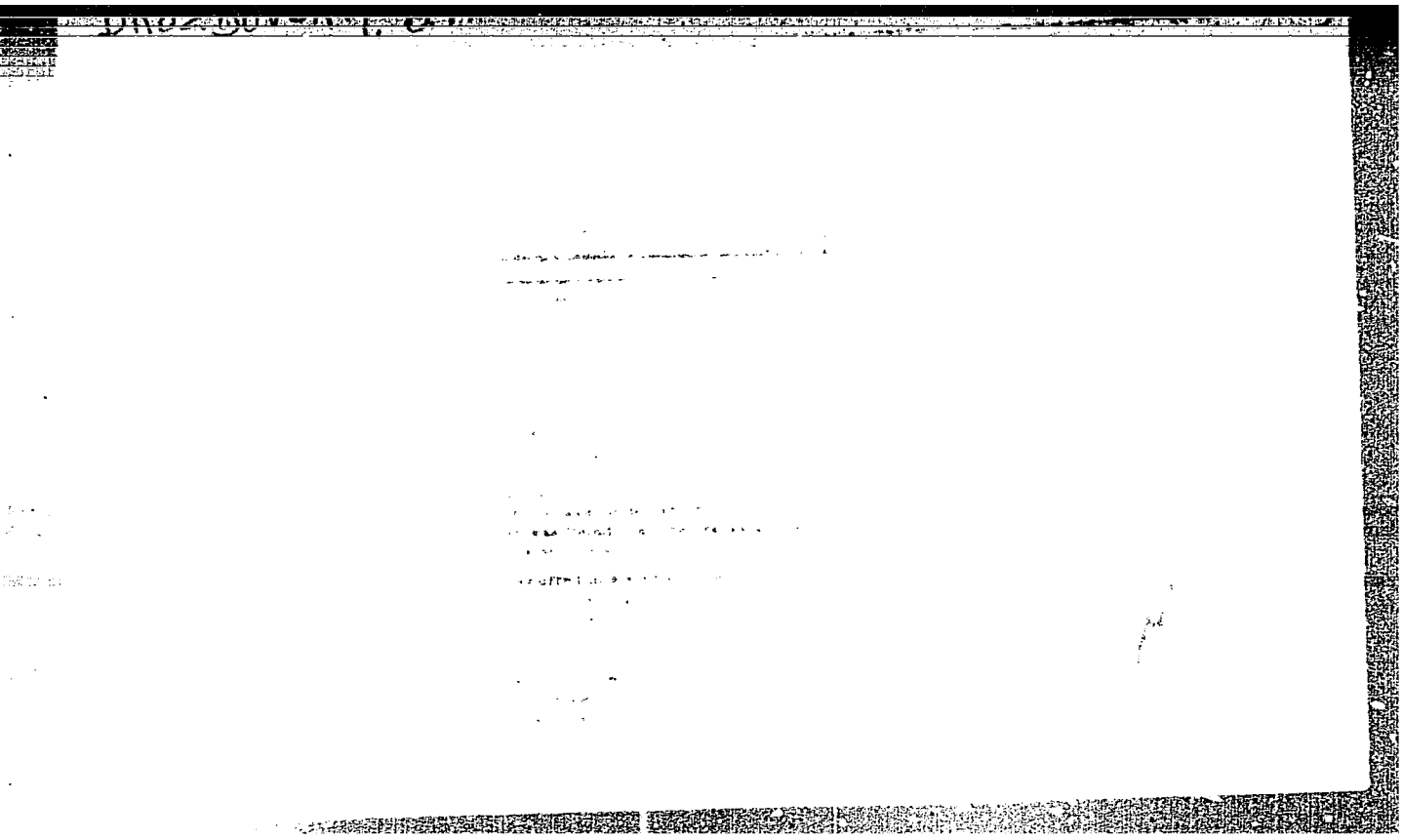
Using wood instead of metal in making inserts. Stroitel' no.12: 5 D '57. (MIRA 11:2)

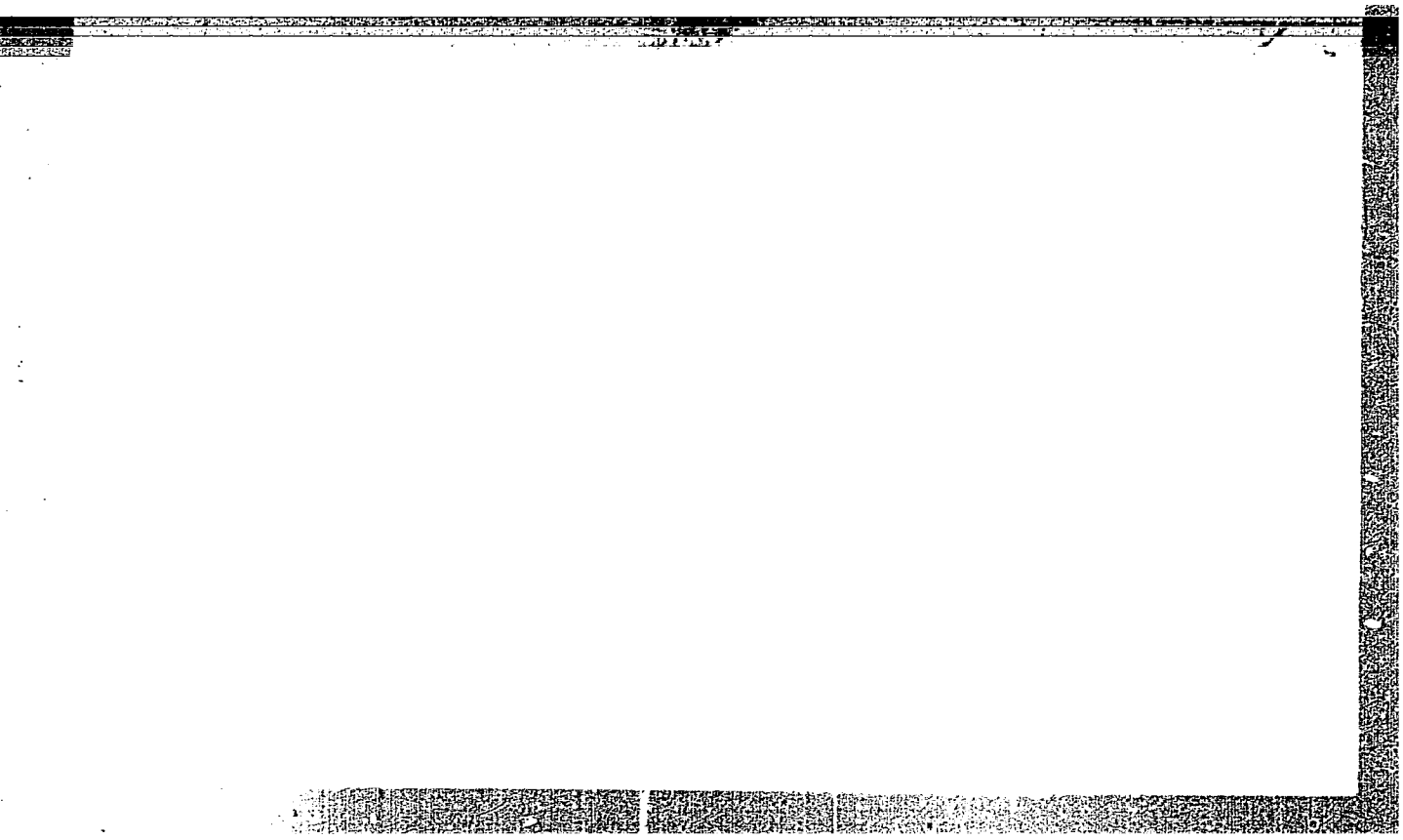
(Concrete construction--Formwork)

MARGOLIN, G.I., inzhener; DROZDOVSKIY, B.A., inzhener; ORLETS, P.I., inzhener.

Junction lines in shaped steel castings. Stal' 7 no.1:58-62 '47. (MLRA 9:1)

1.Kirovskiy zavod.
(Steel castings)





DROZDOVSKIY, B.A.

24(6) PHASE I BOOK EXPLOITATION SOV/2385

Akademiya nauk SSSR

Nekotoryye problemy prochnosti tverdogo tela; sbornik statey (Some Problems in the Strength of Solids; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 386 p. Errata slip inserted. 2,000 copies printed.

Ed. of Publishing House: V. I. Aver'yanov; Tech. Ed.: R. S. Pevzner; Editorial Board: A.F. Ioffe, Academician; G. V. Kurdyumov, Academician; S. N. Zhurkov, Corresponding Member, USSR Academy of Sciences; B. P. Konstantinov, Corresponding Member, USSR Academy of Sciences; F. F. Vitman, Doctor of Physical and Mathematical Sciences, Professor (Resp. Ed.); L. A. Glikman, Doctor of Technical Sciences, Professor; N. A. Zlatin, Doctor of Physical and Mathematical Sciences; V. A. Stepanov, Doctor of Technical Sciences; Ya.B. Fridman, Doctor of Technical Sciences, Professor; B. S. Ioffe, Candidate of Technical Sciences (Deputy Resp. Ed.).

PURPOSE: This book is intended for construction engineers, technologists, physicists and other persons interested in the strength of materials.

COVERAGE: This collection of articles was compiled by the Otdeleniye fiziko-matematicheskikh nauk AN SSSR (Department of Physical and Mathematical Sciences) and the Fiziko-tekhnicheskiy institut AN SSSR (Institute of Applied Physics, Academy of Sciences, USSR) in commemoration of the 80th birthday of Nikolay Nikolayevich Davidenkov, Member of the Ukrainian Academy of Sciences, founder and head of the Otdel prochnosti materialov (Department of the Strength of Materials) at the Institute of Applied Physics, Academy of Sciences, USSR, founder of the Fakul'tet fizicheskogo metallovedeniya (Department of Physical Metallurgy) at the Leningradskiy politekhnicheskiy institut (Leningrad Polytechnic Institute), recipient of the Stalin Prize (1943), the Order of the Red Banner of Labor (1945) and the Order of Lenin (1953). The articles deal with the strength of materials, phenomena of imperfect elasticity, temper brittleness, hydrogen embrittlement, cold brittleness, influence of deformation speed on the mechanical properties of materials, fatigue of metals, and general problems of the strength, plasticity, and mechanical properties of nonmetals. Numerous personalities are mentioned in the introductory profile of Professor Davidenkov. References are given at the end of each article.

AVAILABLE: Library of Congress

2V

25(6) SOV/32-25-3-26/62

AUTHORS: Drozdovskiy, B. A., Fridman, Ya. B.

TITLE: Methods of Determining the Sensitivity of Materials to Crack Formation in Impact Bending Tests (Metodika otsenki chuvstvitel'nosti materialov k treshchinam pri udarnom izgibe)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 3, pp 320-328 (USSR)

ABSTRACT: The tendency of steel towards rupture as a consequence of brittleness has been more and more frequently determined by the resistance against crack formation (Refs 1-7). In a previous paper (Ref 13) a test of this kind was proposed for highly resistant steels and it was found that in many cases better results were obtained by indentations R = 1 mm (e.g. with steel 30KhGSNA) than by samples according to Menazhe In the case under discussion the results of investigations of the form of the sample for impact tests are given (Fig 1) (Table 1). Among others, the steels 30KhGSNA and 12Kh5MA with cracks of the type V, U, and F were used. Static tests were carried out on the machine IM4-A and impact bending tests on a 30 kgm-ram MK-30. The tests took place at various temperatures. Tests with crack-containing samples showed that an increase of the sample width

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Methods of Determining the Sensitivity of Materials to Crack Formation in Impact Bending Tests

and an impact test at lower temperatures can render the test more sensitive to states of brittleness. It is recommended to apply the impact bending test with a crack of cyclic overcharge to sample cross sections according to Menazhe, the crack being obtained by the use of a resonance vibrator (Ref 14). The test is evaluated according to the tensile strength (a_{crack}) per cross section, expressed in kilogram meters/cm^2. A table with ten types of steel and their chemical composition (Table 3) and a comparative table (Table 4) with 22 types of steel and data obtained from samples are given. It was found that by the tests mentioned above more accurate and extensive data on the state of brittleness of steels can be obtained than by the standard methods. There are 10 figures, 4 tables, and 16 references, 6 of which are Soviet.

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25(2) SOV/32-25-3-32/62

AUTHORS: Drozdovskiy, B. A., Palkin, B. A., Ryazanov, N. V.

TITLE: Resonance-vibrator for the Production of Cracks in Samples (Rezonansnyy vibrator dlya sozdaniya treshchin v obraztsakh)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 3, pp 341-343 (USSR)

ABSTRACT: Methods of testing cracked samples have already been reported on (Ref 1). Since the methods of producing cracks in samples used so far take up too much time, a resonance-vibrator unit for producing cracks was constructed (Figs 1,2). The vibrator (according to TsAGI), which can be freely shifted along the tube, is fastened to the tube at the support. Vibration speed of the vibrator disk: 1500 rpm, length of the tube: 400 mm, weight of the vibrator with support: 1 kg, outer diameter of the tube: 45 mm, inner diameter: 35 mm. With an amplitude of 5-6 mm cracks can be produced within 3-4 minutes. Investigations of the influence of the load frequency which were carried out by periodical impact tests on cracked samples on the one hand (150 impacts/min) and on the vibrator on the other hand (frequency: 900 periods/min), showed no difference for medium-resistant steel 30KhGSA and highly-resistant steel 30KhGSNA.

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Resonance-vibrator for the Production of Cracks in Samples

Cracked samples of the same material with the dimensions 10 × 8 mm and 5 × 4 mm were tested and a comparison of the results showed that both tests give the same classification and, for the most part, give absolute values of the specific work similar to those obtained in impact bending tests. There are 2 figures and 1 Soviet reference.

PHASE I BOOK EXPLOITATION SOV/3566

Drozdovskiy, Boris Aleksandrovich, and Yakov Borisovich Fridman

Vliyaniye treshchin na mekhanicheskiye svoystva konstruktsionnykh staley (Effect of Cracks on the Mechanical Properties of Constructional Steels) Moscow, Metallurgizdat, 1960. 260 p. Errata slip inserted. 4,150 copies printed.

Ed.: N.V. Manakin; Ed. of Publishing House: A.L. Ozeretskaya; Tech. Ed.: M.K. Attopovich.

PURPOSE: This book is intended for metallurgists, designers, process engineers, and specialists in the strength of metals.

COVERAGE: The book is an analysis of experimental work on the failure of steels and other alloys and methods of evaluating the tendency of constructional steels to fracture. Special attention is given to methods of determining the ability of steel to resist crack propagation. The book is based primarily on experiments made by the authors and on investigations of other Soviet and non-Soviet specialists. No personalities are mentioned. There are 185 references

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A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No. 9, p. 262, # 21642

AUTHORS: Drozdovskiy, B.A., Fridman, Ya.B.

TITLE: On the Crack Sensitivity of Metals

PERIODICAL: V sb.: Nekotoryye probl. prochnosti tverdogo tela, Moscow-Leningrad, AN SSSR, 1959, pp. 280-296

TEXT: Breakdown of 30ХГСА (30KhGSA), 30ХГСНА (30KhGSNA), 12Х5МА (12Kh5MA) steels and of a series of Ti-, Al- and Mg-alloys was recorded by oscillograms. Impact tests on a ram with a piezoquartz indicator and static tests on an ИМ4А (IM4A) machine were made to investigate the effect of the cross-sectional dimensions of the specimen, the shape and vertex angle of the notch, the temperature and test speed, on the process of breakdown, and crack-sensitivity. It was stated that a drop of the test temperature down to -196°C and a decrease in the vertex angle of the notch to the shape of a crack, reduces the value of conditional rupture stress during static bending by a factor of 8 for steel with σ_b equal to

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On the Crack Sensitivity of Metals

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A006/A001

170 kg/mm^2 and by a factor of 4 for steel with σ_b equal to 115 kg/mm^2, in comparison to a specimen with a notch of 1 mm radius, tested at room temperature. A higher deformation speed raised from 1.2 mm/min (static) to $3 \cdot 10^5$ mm/min (impact) at room temperature increases the value of the conditional rupture stress of specimens with a notch radius of 1 mm, from 5 to 40% for steels subjected to either low or high tempering or to tempering in the brittle range. There are 23 references.

T.F.

Translator's note: This is the full translation of the original Russian abstract.

S/032/60/026/011/020/035
B004/B067

18 8200

AUTHORS: Fridman, Ya. B., Zilova, T. K., Drozdovskiy, B. A., and Petrukhina, N. I.

TITLE: Evaluation of Mechanical Characteristics in Consideration of the Deformation and Destruction Kinetics

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 11, pp. 1267 - 1283

TEXT: The authors discuss the effect of the kinetics of deformation processes on the durability of the material. A pre-critical state (the process is delayed $j < 0$) and a trans-critical state ($j > 0$) may be distinguished when determining the acceleration j of the deformation process. Also the critical point at which j changes its sign may be determined. The consideration of the kinetics is especially important in establishing the modern working conditions for apparatus with a) high operation temperatures, b) high average stress applied for short time, c) nonperiodic stress due to distorted fields of stress in complex designs and irregular action of temperature, corrosion or radiation, and

Evaluation of Mechanical Characteristics in Consideration of the Deformation and Destruction Kinetics

S/032/60/026/011/020/035
B004/B067

d) structural instability of the material. The following is distinguished in the transcritical state: 1) incubation period, 2) braking period, 3) steady period, and 4) final period sometimes taking place avalanche-like. The mechanical characteristics of the individual periods were defined and discussed. The effect of elastic energy and relaxation on the deformation kinetics is discussed by examples of material testing of X15N9Yu (Kh15N9Yu) and X17N5M3 (Kh17N5MZ) steels and B95 (V95) and B96 (V96) lightweight alloys and the effect of asymmetrical indentations as well as of surface changes due to thermal processes is explained. B. A. Palkin, N. V. Ryazanov, Yu. A. Bulanov, and T. V. Avdyunina are mentioned. Reference is made to a paper by E. I. Braynin. There are 14 figures, 5 tables, and 42 references: 37 Soviet, 1 US, 1 Austrian, 2 British, 1 German, and 1 Japanese.

Card 2/2

25636

S/032/61/027/007/007/012
B110/B203

15.2610

AUTHORS: Drozdovskiy, B. A., Markochev, V. M., Polishchuk, T. V., and Fridman, Ya. B.

TITLE: Method of determining the rate of brittle destruction of non-conductors

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 7, 1961, 888-894

TEXT: In samples with previously applied notch, Ye. A. Kuz'min and V. P. Pukh (Ref. 5: Sb. "Nekotoryye problemy prochnosti tverdogo tela", Izd. AN SSSR, str. 367 (1959)) found a decrease in the rate of destruction with decreasing mean stresses (at an industrial glass strength of < 0.1). The present paper describes a method of estimating the rate of destruction, and gives test results of concentrated bending of organic glass samples with differently sharp notches and large bottom radius of the latter. Thus, a large reserve in elastic energy was obtained before destruction. 0.8 mm wide and 2-3 μ thick silver strips sprayed on in vacuo with the aid of a template were used for measuring the rate. Current was applied by way of two textolite contacts with spring laminae. Tests were made with 50 mm distance

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Method of determining the rate of ...

between points of support on an ИМ-4А (IM-4A) machine with 0.48 mm/t yielding The first Ag strip, situated directly below the notch, is shunted with the resistor R_2 (Fig. 2). R_2 and R constitute the voltage divider connected with a 180-v battery. Before breaking, the voltage in A is zero, then R_2 is switched on, and the voltage rises suddenly to 150 v ($R_2 \gg R$). It blocks the oscillator tube with shock excitation, and excites the generator. Hence the voltage passes over the other delay lines ЛЗ (LZ) to the first plate pair of the double-trace cathode oscilloscope ОК-17М (OK-17M). Blocking of the tube produces, on its anode, a positive pulse which passes over the delay line to the oscilloscope. With alternating current (1 Mc) from the shock excitation generator ГУВ (GUV), the oscilloscope shows a sinusoid. When the second Ag strip breaks, R_2 is switched on, which, like every further strip rupture, reduces the sinusoid amplitude. When the last strip breaks, no sinusoidal voltage arrives at the oscilloscope. The photographs were shot by a Зоркий С(Zorkiy S) apparatus with Юпитер 3(Yupiter 3) object lens (light intensity 1 : 1.5) with diaphragm 1 : 2.8 and plates with 250 or 350 ГОСТ(GOST) units. The course of cracking was determined according to Fig. 3. Its mean recording velocity between two strips was the distance l divided by the time between the fracture of two adjacent strips obtained by

counting the sinusoid peaks of the individual oscillogram steps. The authors examined polymethyl methacrylate samples of the types "C" ("S"), "X" ("Kh") (dimensions: 10•40•70 mm) and "T" ("T"). The 4-5 samples of each type hardened at first at 110-150°C were split by varying load on a resonance vibrator (1500 cps), and hardened at 70-105°C for 30-60 min. On 10•10•38 mm "S" samples with 2 mm deep notches, the authors studied the effect of notch sharpness and size of samples on the rate of destruction. The destruction stress and the maximum destruction rate decrease with increasing notch sharpness. The maximum destruction rate becomes more constant. Also the velocities obtained by graphical differentiation of the distance-versus-time curves become more uniform. For split samples, they are almost constant, for unsplit samples, they drop from 700 to 300 m/sec. Samples without a notch show the greatest roughness of fracture, those with a notch of 2 mm radius show lower roughness, those with a notch of 1 mm radius, the lowest one. The zone adjacent to the fatigue split has nearly fibrous structure with numerous crack traces propagating in parallel to each other from many centers. The principal zone is completely smooth. Since the velocity of this fracture is much lower than the final velocity, the measurement should be made with a film (32 frames per second). The

following process is observed: (I) sudden destruction; (II) increasing velocity (incubation period: 3-4.5 mm in 0.36-2 sec); (III) linear increase (30-50 mm/sec). The fibrous-structure fracture changes to smooth fracture. After 10,000-fold, sudden increase, v_{max} = 250-270 m/sec is attained with subsequent decrease. Thus, the maximum destruction rate, v_{max}, depends on the notch sharpness determining the destruction stress. A stress increase from 2.14 to 11.3 kg/mm^2 raises v_{max} from 245 to 684 m/sec. The propagation rate of longitudinal elastic vibrations in polymethyl methacrylate is 1640 m/sec. v_{max} for samples without a notch is 0.416 of this value, in tension tests, it is 0.55, for samples with a notch, 0.132. Thus, a destruction rate of 0.55 of the sonic velocity was obtained whereas former measurements established 0.33 for silicate glass. In elongation, the whole deformable length contributes to acceleration, in bending, the volume adjacent to the notch. An increase of the reserve in elastic energy showed little effect on the rate of destruction. An increase in dimensions under equal conditions (also of the notch) showed a high effect. An increase in the moment of resistance ($bh^2/6$) from 187 to 3,000 mm^3 effected

Method of determining the rate of ...

an increase of v_{max} from 231 to 513 m/sec. The authors thank Yu. A. Bulanov for assisting in the development of apparatus. There are 12 figures, 1 table and 8 references: 3 Soviet-bloc and 5 non-Soviet-bloc. The most important reference to English-language publications reads as follows:

Ref. 4: H. Schardin. Fracture, Proc. of an Intern. conference on the Atomic Mechanisms of Fracture, Swampscott, Mass., Apr., John Wiley and Sons, p. 297 (1959).

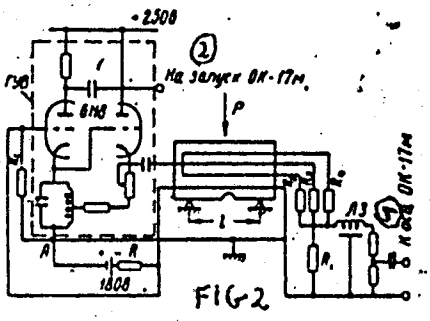

Fig. 2. Circuit diagram of the apparatus for determining the rate of destruction of non-conductors.
Legend: (1) to the OK-17M, (2) to the input of the OK-17M.

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ACCESSION NR: AP4037065 S/0129/64/000/005/0021/0028

AUTHOR: Drozdovskiy, B. A.; Pevzner, L. M.; Tarantova, A. S.; Fridman, Ya. B.; Kishkin, S. T.

TITLE: Effect of carbon content on the tensile strength of structural steel sheets

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 5, 1964, 21-28

TOPIC TAGS: high strength steel, superstrength steel, medium alloy steel, VKS-1 steel, solid fuel rocket, rocket case, rocket case material, steel notch sensitivity

ABSTRACT: The effects of carbon content, melting conditions, and heat treatment conditions (primarily tempering temperature) on the strength and ductility (in conventional tensile tests and under biaxial tension), and notch sensitivity of two superstrength steels VKS-1 and [AISI]4137-Co are investigated. Four grades of VKS-1 (0.30, 0.39, 0.45, or 0.53% carbon; 0.89% manganese; 1.2% silicon; 1.87% chromium; 0.72% nickel; 0.49% molybdenum; .05% vanadium; 0.011% sulfur; and 0.008%

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ACCESSION NR: AP4037065

phosphorus) were melted in an open atmosphere induction furnace. The 4137-Co (0.40% carbon, 0.84% manganese, 1.02% silicon, 1.32% chromium, 0.36% molybdenum, 0.19% vanadium, and 1.1% cobalt) was melted either in an open atmosphere induction furnace or in a consumable electrode vacuum arc furnace. Both steels were rolled into sheets 1 mm (VKS-1) or 1.5 mm (4137-Co) thick. Special care was taken to prevent surface decarburization. Tests revealed that tensile and yield strength of VKS-1 steel increased steadily with increased carbon content up to 0.45%. Steel with 0.45% carbon tempered at 150C has a tensile strength of 240—245 kg/mm^2 but low ductility and a high notch sensitivity. When tempered at 220C the steel had a tensile strength of 220—230 kg/mm^2, yield strength of 180 kg/mm^2, and elongation 6.5%. Further increase of carbon content brings about premature brittle failures. Elongation remains almost unaffected by increase of carbon content from 0.30 to 0.45% but notch sensitivity increases very sharply. Under conditions of biaxial tension the strength of VKS-1 increased with higher carbon content only up to 0.39%. With 0.30—0.39% carbon the fracture is ductile and the strength is higher than that in uniaxial tension. As the carbon content is increased to 0.45% the fracture becomes brittle, the

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ACCESSION NR: AP4037065

strength drops and goes below the level noted in uniaxial tension. Generally, the maxima on the strength-carbon content or strength-tempering temperature curves for biaxial tension do not coincide with those for uniaxial tension but occur at carbon contents and tempering temperature at which the strength in uniaxial tension amounts to about 200 kg/mm^2. The behavior of 4137-Co steel followed a similar pattern. It was found, however, that vacuum arc melting improved ductility, especially in biaxial tension, and lowered notch sensitivity. No brittle failures were observed even at tempering temperature as low as 150C. No correlation between the strength in biaxial tension and any characteristics in uniaxial tension was found in either steel. It is concluded that the problem of improvement of structural strengtn is closely related to the prevention of brittle fracture at higher uniaxial strength. This can be achieved by complex alloying with a minimum segregation of components; improved metallurgical processes ensuring higher purity of metal; control of solidification processes to prevent microsegregation and improve the strength of interdendritic boundaries; and finally by thermomechanical treatment with a maximum grain refinement.

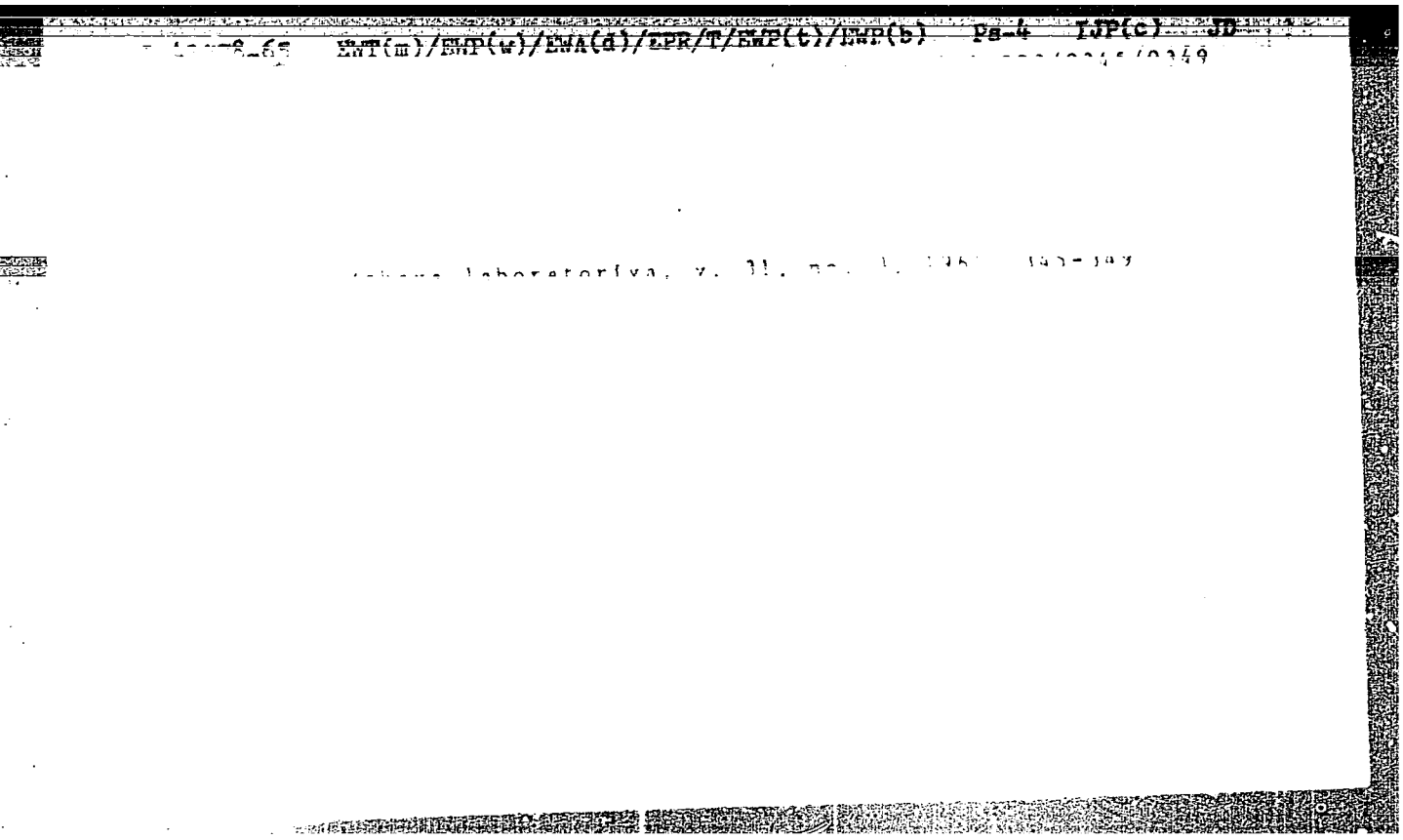
Card 3/4

ACCESSION NR: AP4037065

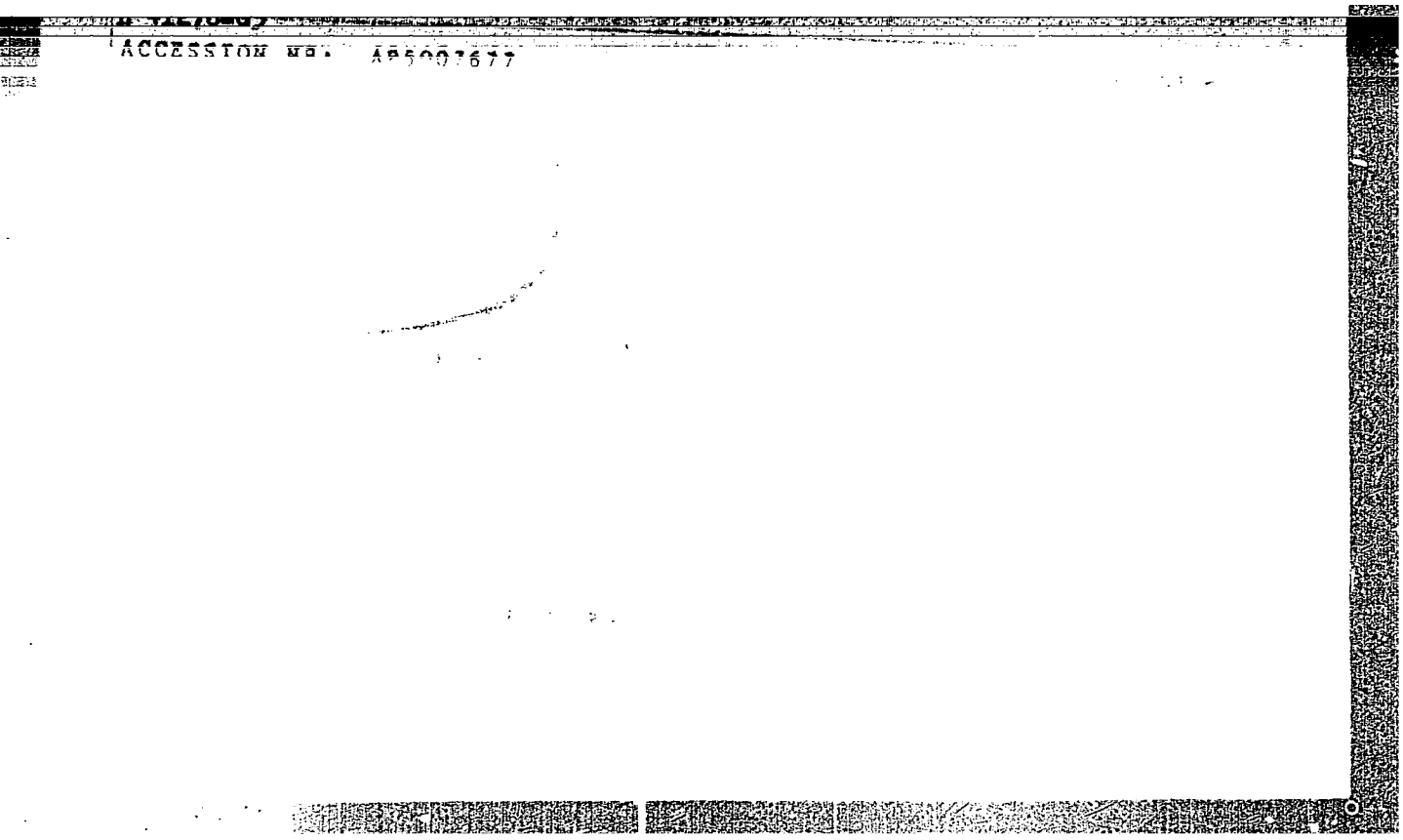
ASSOCIATION: none

SUBMITTED: 00	DATE ACQ: 05Jun64	ENCL: 00
SUB CODE: MM	NO REF SOV: 004	OTHER: 004

Card 4/4



APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041123(



L 40953-66 EWT(m)/EWP(w)/EWP(k)/T/EWP(t)/ETI IJP(c) EM/JH/HW/JD
ACC NR: AT6024920 (A) SOURCE CODE: UR/2981/66/000/004/0112/0119

AUTHOR: Kishkina, S. I.; Zilova, T. K.; Kadobnova, N. V.; Drozdovskiy, B. A.; Bubenshchikov, V. S.; Surkova, Yu. I.

54
53
B+1

ORG: none

TITLE: Stress-concentration and crack sensitivity of ATsM, ATsMU and AMg6 alloys and their welds

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy (Heat-resistant and high-strength alloys), 112-119)

TOPIC TAGS: aluminum alloy, high strength alloy, stress concentration, notch sensitivity, metal property, / ATsM aluminum alloy, ATsMU aluminum alloy, AMg6M aluminum alloy, AMg6N aluminum alloy

ABSTRACT: Hot-rolled ATsM, ATsMU, AMg6M and AMg6N alloy plates 10 mm thick, ATsM and ATsMU alloy forgings, ATsMU and AMg6M alloy extruded shapes, and welds of these alloys have been tested for stress-concentration and crack sensitivity. The sensitivity to stress concentration was evaluated on the basis of tensile tests with notched specimens stressed under an angle of 4—8° to the axis. Crack sensitivity was tested with Mesnoger specimens having artificial cracks 1.5 mm deep. In all cases, specimens of ATsM and ATsMU alloys were tested after

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L 40953-66

ACC NR: AT6024920

aging at 90—100C for 100 hr. It was found that plates and extruded shapes of AMg6M alloy and their welds had low sensitivity to crack and stress concentration. The 20% strain-hardened AMg6N alloy plates were found to be crack and stress-concentration sensitive. The AMg6N alloy welds, however, had a low sensitivity to cracks and stress concentrations, identical to that of annealed plates and welds. Welds of high-strength ATsM alloy (tensile strength over 43 kg/mm^2) were found to be stress-concentration and crack sensitive. The results of these tests led to the conclusion that AMg6N (strain-hardened AMg6) can be used in large welded structures. The ATsM alloy is less suitable for such structures because of high sensitivity to stress concentrations and cracks. Orig. art. has: 2 figures and 3 tables. [TD]

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 002/ ATD PRESS: 5056

Card 2/2 hs

DROZDOVSKIY, E. M., Cand Agr Sci -- (diss) "Coccidia on fruit and berry crops in the Moscow oblast." Moscow, 1960. 15 pp; 1 page of tables; (Moscow Order of Lenin Agricultural Academy im K. A. Timiryazev); 110 copies; price not given; (KL, 17-60, 162)

DROZDOVSKIY, E.M., kand.sel'skokhoz.nauk

Methods for isolating the strawberry nematode Aphelenchoides fragariae. Zashch. rast. ot vred. i bol. 7 no.2:44 F '62. (MIRA 15:12)

1. Nauchno-issledovatel'skiy zonal'nyy institut sadovodstva nechernozemnoy polosy.
(Strawberries—Diseases and pests)
(Nematode diseases of plants)

DROZDOVSKIY, E.M., kand.sel'skokhoz.nauk

Strawberry nematode in the central zone of the R.S.F.S.R.
Zashch.rast.ot vred.i bol. 7 no.5:53-54 My '62. (MIRA 15:11)

1. Institut sadovodstva nechernozemnoy polosy, st. Biryulevo, Moskovskoy oblasti.
(Strawberries--Diseases and pests)
(Nematode diseases of plants)

KOROLEV, P.A.; NIKIFOROV, A.M.; SHAPIRO, I.D.; VILKOVA, N.A.; DROZDOVSKIY, E.M.

Questions and answers. ZAshch. rast. ot vred. i bol. 8 no.2: 39-40 F '63. (MIRA 16:7)
(Plants, Protection of)

RIDER, V.A.; POLYAKOV, M.A.; DROZDOVSKIY, E.M., kand. sel'skokhoz. nauk; NIKIFOROV, A.M.; NEMTSOVA, I.A., fitopatolog

Questions and answers. Zashch. rast. ot vred. i bol. 8 no.3:37,39 Mr '63. (MIRA 17:1)

1. Nachal'nik Voronezhskoy stantsii zashchity rasteniy (for Rider). 2. Nachal'nik Verkhnekhavskogo otryada po bor'be s vreditelyami i boleznyami rasteniy (for Polyakov).

DROZDOVSKIY, E.M.; MORDKOVICH, Ya.B.

Information and brief news. Zashch. rast. ot vred. i bol. 8 no.11: 59-60 N '63. (MIRA 17:3)

1. Institut sadovodstva, Biryulevo, Moskovskoy obl. (for Drozdovskiy).

DROZDOVSKIY, E.M., kand.sel'skokhoz.nauk

Early spring work in orchards and strawberry plantations. Zashch. rast. ot vred. i bol. 9 no. 4:35-36 '64. (MIRA 17:5)

DROZDOVSKIY, E.M.

Introduce all new discoveries into production. Zashch. rast. ot vred. i bol. 9 no.5:9-10 '64. (MIRA 17:6)

1. Zaveduyushchiy otdelom zashchity rasteniy Instituta sadovodstva Nechernozemnoy zony.

DROZDOVSKIY, Edgar Mikhaylovich; PRONICHEVA, A.K., red.

[Strawberry nematode] Zemlianichnaia nematoda. Moskva, Kolos, 1965. 93 p. (MIRA 18:7)

FRIDANTSEVA, Ye.A., nauchnyy sotrudnik; IONIROVSKIY, V.N. (Khar'kov); GRACHEV, A.F.; VOVCHENKO, D.P., kand. biolog. nauk; CHEMODANOVA, Ye.V., kand. sel'skokhoz. nauk; KALINICHENKO, A.N.; PETRUSHOVA, N.I., kand. sel'skokhoz. nauk; OVCHARENKO, G.V.; FLORINSKAYA, G.N.; DROZDOVSKIY, E.M.; DROZDOVSKIY, E.M.; MATLASHENKO, Ye.V., aspirantka

Brief news. Zashch. rast. ot vred. i bol. 9 no.7:50-53 '64.
(MIRA 18:2)

1. Dal'nevostochnaya opytnaya stantsiya Vsesoyuznogo nauchno-issledovatel'skogo instituta rasteniyevodstva (for Grachev). 2. Mleyevskaya opytnaya stantsiya sadovodstva, Cherkasskaya oblast' (for Vovchenko). 3. Velikolukskiy sel'skokhozyaystvennyy institut (for Chemodanova). 4. Altayskaya opytnaya stantsiya sadovodstva, Barnaul (for Kalinichenko). 5. Nikitskiy botanicheskiy sad (for Petrushova, Ovcharenko). 6. Moldavskiy institut sadovodstva, vinogradarstva i vinodeliya, Kishinev (for Florinskaya). 7. Nauchno-issledovatel'skiy zonal'nyy institut sadovodstva nechernozemnoy polosy (for Drozdovskiy). 8. Tadzhikskiy nauchno-issledovatel'skiy institut sel'skogo khozyaystva (for Matlashenko).

L 23875-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l)

ACC NR: AP6009914 (A) SOURCE CODE: UR/0413/66/000/004/0112/0112

27
B

AUTHOR: Drozdovskiy, G. P.; Kolominov, V. P.; Orlov, S. F.; Magirovskiy, N. P.; Fedoseyev, O. V.

CRG: none

TITLE: A machine for felling and hauling trees without the use of a choker. Class 45, No. 179112 [announced by Leningrad "Order of Lenin" Forestry-Engineering Academy imeni S. M. Kirov (Leningradskaya Ordena Lenina lesotekhnicheskaya akademiya); Onega Tractor Plant (Onezhskiy traktornyy zavod)]

SOURCE: Izobreteniya, promyshlennyy obraztsy, tovarnyye znaki, no. 4, 1966, 112

TOPIC TAGS: forestry, transportation equipment, woodworking machinery

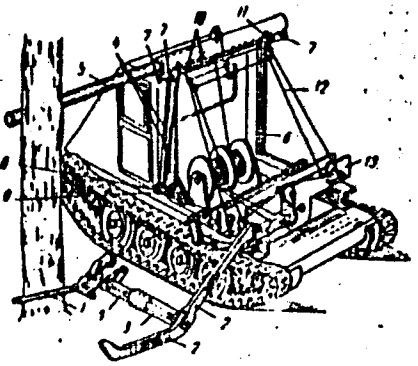
ABSTRACT: This Author's Certificate introduces: 1. A machine for felling and hauling trees without the use of a choker. The unit includes a self-propelled base with a frame which rotates in the vertical longitudinal plane of the machine and carries an extensible roller arm. Also mounted on the base are a receiving and loading device with collapsible packing arm, a cutting mechanism, a winch, a drive, and a device for fastening the logs to the receiving beam. This latter device contains a constantly closed loop of cable fastened at the ends to the winch drum with a mechanism for keeping the loop separated. In order to increase productivity, simplify control of the

UDC: 634.0.36:629.114.2

Card 1/3

L 23875-66
ACC NR: AP6009914

machine and cut logs by various methods, the cutting mechanism is fastened to the packing arm of the receiving and loading device by a telescoping bar which may be ro-



1--cutting mechanism; 2--packing arm; 3--telescoping bar; 4--lengths of cable; 5--roller arm; 6--rotating frame; 7--pulleys; 8--drive for the roller arm extension mechanism; 9--drive for the cable loop separation mechanism; 10--cable guys; 11--guide rings; 12--cable loop; 13--receiving beam.

tated around its longitudinal axis. The mechanism for extension of the roller arm is made with lengths of cable fastened to the roller arm with the other ends passed through pulleys mounted on the upper cross beam of the rotating frame. These cables are driven by a unit which is connected with the drive for the mechanism which separates the cable loop. This mechanism is made with cable guys which are also fastened at one end to the drive while the other ends are passed through guide rings mounted on the upper cross beam of the rotating frame and freely connected to the cable loop of the device for fastening the logs to the receiving beam. 2. A modification of this machine in which the operation of the mechanism for extension of the roller arm is synchroniz-

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L 23875-66
ACC NR: AP6009914 O

ed with that of the mechanism for separation of the cable loop by making their common drive in the form of two drums. One of these drums is rigidly fastened to the drive shaft while the other is connected to this shaft by a slip clutch.

SUB CODE: 02,13/ SUBM DATE: 29Mar65/ ORIG REF: 000/ OTH REF: 000

Card 3/3 dda

DROZDOVSKIY, L.S.

Functional state of the neuromuscular apparatus in patients with sequelae of cerebrocranial trauma and its modification during fangotherapy associated with exercise therapy. Zhur.nevr. i psikh. 56 no.10:826-827 O '56. (MLRA 9:12)

1. Klinika nervnykh bolezney Ukrainskogo nauchno-issledovatel'skogo instituta kurortologii, Odessa.

(BRAIN, diseases,
seq., fangother. & exercise ther., eff. on neuromusc. funct. (Rus))
(EXERCISE THERAPY, in vaious diseases,
brain dis. seq., with fangother., eff. on neuromusc. funct. (Rus))
(MUD THERAPY, in vaious diseases,
brain dis. seq., with exercise ther., eff. on neromusc. funct. (Rus))
(MUSCLES, physiology,
neuromusc. funct. after fangother. & exercise ther. of brain dis. seq. (Rus))
(NERVOUS SYSTEM, physiology,
same)

DROZDOVSKIY, L3 87, Cand Med Sci -- "Clinical physiological indexes of the functional state of the motor apparatus of patients with remote consequences of penetrating craniocerebral wounds in the process of complex Health-resort mud treatment." Mos, 1960 (Min of Health USSR. Central Sci Res Inst of Health ~~Balneology~~ Resort Science and Physiotherapy). (KL, 1-61, 207)

[redacted], L. A.

[redacted] attached for mailing [redacted].

[redacted]

Similar Cards: P: Voennizdat (Armament), No. 1, [redacted] Apr 41

Abstracted in U.S.S.R., "Treasure Island", on file in Library of Congress, Air Information Division, Report No. 3312

DROZDOVSKIY, M. A.

Wrote on new attachemnt for Piston Rings.

Soviet Source: P. Voorusheniye (Armament) April 41, Moskva

Abstract in USAF, "Treasure Island" on file in Library of Congress, Air Information Division, Report No 96324

DROZDOVSKIY, M.A., inzhener.

Standardisation of manufactured objects and their parts. Standartizatsiia no.2:84 Mr-Ap '57. (MLRA 10:6)
(Standards, Engineering) (Simplification in industry)

PROCESSING

28-5-20/30

AUTHOR: Bereznitskiy, B.P., and Khalileyev, K.A., Engineers

TITLE: On the Normalization of Equipment and Its Elements (O normalizatsii izdeliy i ikh elementov)

PERIODICAL: Standartizatsiya, 1957, # 5, p 78-79 (USSR)

ABSTRACT: The authors of the two letters published under this title criticize the article "Normalization of Equipment and Its Elements" ("Normalizatsiya izdeliy i ikh elementov") by M.A. Drozdovskiy, "Standartizatsiya" # 2, 1957.

Both authors say that machines can be normalized without preliminary normalization of parts.

Since Drozdovskiy cited examples from the field of normalization of radio and electronics, it is pointed out that the technical documents for just this industry branch (1st part of "МН СЧХ") indicate that by "normalized equipment" is meant series-produced equipment, and that technical working documents have to be made for such equipment, including the working drawings for parts, i.e. the parts which are also normalized. It is wrong that the equipment mentioned by Drozdovskiy was normalized without normalizing the parts. Such norms or standards can exist

Card 1/2

without a direct connection with work drawings, and there are hundreds of such standards. An obligatory normalization of parts, as suggested by Drozdovskiy, would require the re-working and re-numbering of drawings, and would create confusion.

AVAILABLE: Library of Congress

Card 2/2

DROZDOVSKIY, M.A.

AUTHOR: Drozdovskiy, M.A., Engineer

28-58-1-11/34

TITLE: Normalization-Inspection of Technical Documents (Normalizatsionnyy kontrol' tekhnicheskoy dokumentatsii)

PERIODICAL: Standartizatsiya, 1958, # 1, pp 34-35 (USSR)

ABSTRACT: The author expresses his opinion of what the man purpose of normalization-inspection is and proposes a new system to be used by engineering departments of industrial plants. The normalization inspection would be the last step in work on drawings and specifications, and no technical document would leave the engineering department without the signature of the engineer in charge of normalization. This main job of the engineer would be to see that standardized and normalized parts, dimensions, modules, etc have been used.

AVAILABLE: Library of Congress

Card 1/1

AUTHOR: Drozdovskiy, M.A., Engineer

TITLE: Normalization of Universal Assembly Fixtures (Normalizatsiya universal'no-sborochnykh prisposobleniy)

SOV-28-58-4-19/35

PERIODICAL: Standartizatsiya, 1958, Nr 4, pp 59 - 60 (USSR)

ABSTRACT: A system of universal assembly fixtures (USP) consists of sets of exchangeable high precision parts, i.e. groups of basic, supporting, adjusting, controlling, clamping, fastening and other devices of a definite character, which can be assembled on different attachments. The USP-system was put into use at a Moscow machinebuilding plant and is now being applied at different enterprises. It provides considerable economical advantages and permits the organization of centralized production of parts and their supply to plants, thus eliminating the necessity of independent production at the plants. There is 1 table.

1. Industrial equipment--Standards 2. Industrial equipment --Production

Card 1/1

AUTHOR: Drozdovskiy, M. A., Engineer

TITLE: The Complex Normalization of Tools (Kompleksnaya normalizatsiya instrumenta)

SOV/28-59-1-7/29

PERIODICAL: Standartizatsiya 1959, Nr 1, pp 25 - 28 (USSR)

ABSTRACT: The Mashinostroitel'nyy Institut (Institute of Machine Construction) analyzed the standardization status of 13 varieties of mechanical structural elements and joints. The status of the standardization of cutting tools and gaging instruments was determined by the above analysis. As a result of this work, 80 varieties of cutting, and 63 of gaging tools were fixed. Data on the standardization of these cutting tools and gaging instruments is presented in a table. This table proves the necessity of standardizing the following elements and tools: facets at the end of even shafts and openings; facets on prismatic details; the end mills; the corresponding gages; grooves in bolt caps, channels in axles and pipes, cross channels in tubular details; channels on flat details, and the interior channels in nuts, etc. The standardization of a further number of elements of machine construction (cutting tools and gaging instruments, such as

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worm gears, cutting tools for milling the buttress screw thread etc.) is proposed. There are 2 tables.

DASHKOVSKIY, A.F., kand.tekhn.nauk [deceased]; DLIN, F.S.; BILETSKIY, G.V.; DROZDOVSKIY, M.M.

Ways for the modernisation of drying rooms. Bum. i der. prom. no.1:39-41 Ja-Mr '65. (MIRA 18:10)

AKHMETOV, M.M.; ANOSHKIN, V.V.; DROZDOVSKIY, N.I.; VALEGZHANIN, V.V.; FILIPPOV, N.I.; KNYAZEV, V.L.; SMIRNOVA, A.M.

Short-delay blasting in mines of the Leninogorsk Complex Ore Combine. Trudy Alt. GMNII AN Kazakh. SSR. 15:43-47 '63. (MIRA 17:3)

AKHMETOV, M.M.; ANOSHKIN, V.V.; DROZDOVSKIY, N.M.; KNYAZEV, V.L.; GAZIZOV, Kh.Kh.

Effect of current strength on the internal time drift from wear of electric short-delay detonators. Trudy Inst.gor.dela AN Kazakh.SSR 8:102-106 '61. (MIRA 15:4)
(Detonators)

AKHMETOV, M.M., kand. tekhn. nauk; ANOSHKIN, V.V., gornyy inzh.; DROZDOVSKIY, N.N., gornyy inzh.; SHAMSUTDINOV, R.N., gornyy inzh.; RUDAKOV, N.F., gornyy tekhnik; KNYAZEV, V.L., tekhnik

Results of testing electric detonators with a delay interval of 15 msec. Gor. zhur. no.5:38-39 My '65. (MIRA 18:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy gornometallurgicheskiy institut tsvetnykh metallov (for all except Knyazev). 2. Lenino-gorskiy polimetallicheskiy kombinat (for Knyazev).

TIMOFEYEV, N.N.; ANOKHINA, A.D.; SOROKIN, S.P.; DROZHEVSKIY, N.P.; GLUSHTSOV, M.V.; LARIONOV, A.S.; KOZLITIN, G.I.

Block lining of the upper structure of open-hearth furnaces. Ogneupory 30 no.11:8-10 '65. (MIRA 18:11)

1. Vsesoyuznyy institut ogneuporov (for Timofeyev, Anokhina).
2. Volgogradskiy metallurgicheskiy zavod "Krasnyy Oktyabr'" (for Sorokin, Drozhevskiy, Glushtsov, Larionov, Kozlitin).

DROZDOVSKIY, S.S., inzh.

Water resources of the Azerbaijan S.S.R. and their integrated utilization. Gidr.stroi. 34 no.11:3-5 N '63. (MIRA 17:3)

L 15669-63 EWP(j)/EWT(m)/BDS ASD/AFFTC Pc-4 RM
ACCESSION NR: AP3004257 S/0138/63/000/007/0033/0035

AUTHORS: Drozdovskiy, V. F.; Shokhin, I. A.; Bairova, E. D.

TITLE: Destruction of monosulfide bonds of sulfur vulcanizates

SOURCE: Kauchuk i rezina, no. 7, 1963, 33-35

TOPIC TAGS: sulfur vulcanizate, regeneration, thiuram vulcanizate, zinc stearate, monosulfide bond

ABSTRACT: An attempt was made to discover the origin of the sulfur which appears as zinc sulfide in the reclamation process of vulcanized rubber. To this end the reactions taking place in the absence of oxygen between zinc stearate or zinc oxide and the ethyl ether of dibutyldithiocarbaminic acid (EDTCA), dipropylmonosulfide (DPMS), and diallylmonosulfide (DAMS) were studied. Ampules with zinc stearate and EDTCA were heated at 180C for 0.5-20 hours and at 200C for 5 hours, then the compounds were analyzed for sulfide sulfur. At 180C only an insignificant quantity of ZnS was formed, while at 200C the yield of sulfide sulfur amounted to 2%. The reaction of zinc stearate with DPMS was conducted at 200 and 220C, without any ZnS being formed. As to DAMS, it was reacted with ZnO at 143, 180,

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L 15669-63
ACCESSION NR: AP3004257

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and 200C for periods from 1 to 20 hours. While at 143C the quantity of sulfide sulfur appearing as ZnS was insignificant, at 180 and 200C it amounted to nearly 20% and 30% respectively of the total amount of sulfide sulfur originally present in the DAMS sample. It is concluded that monosulfide bonds of thiuram vulcanized rubber could be a source of sulfide sulfur, appearing as ZnS during the reclamation process). The EDTCA used in this study was synthesized by Ye. N. Gur'yanova. Orig. art. has: 2 formulas and 2 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promy*shlennosti (Scientific Research Institute of the Tire Industry)

SUBMITTED: 00	DATE ACQ: 21Aug63	ENCL: 00
SUB CODE: MA, CH	NO REF SOV: 007	OTHER: 002

Card 2/2

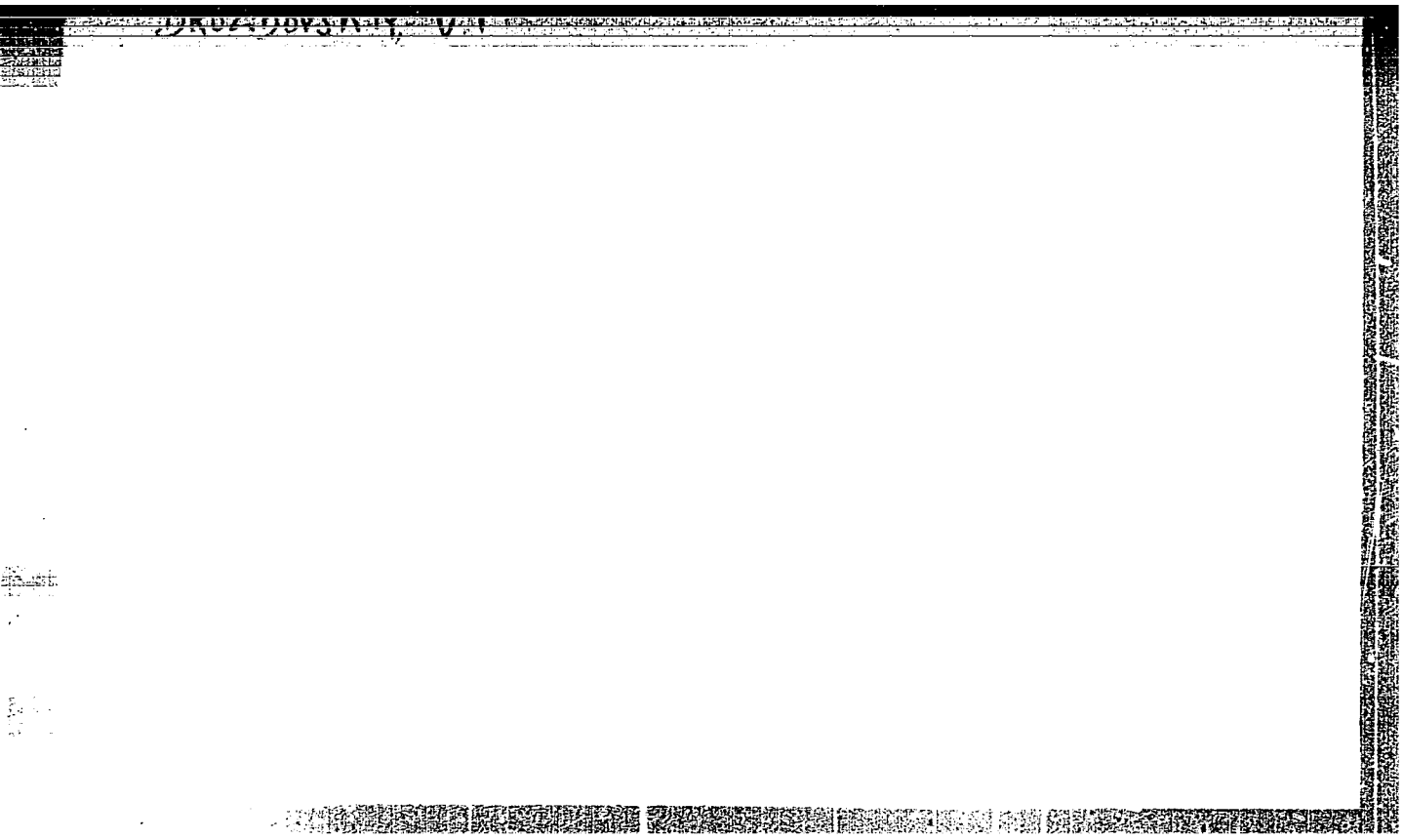
AKHMETOV, M.M.; ANOSHKIN, V.V.; DROZDOVSKIY, N.N.; SMIRNOVA, A.M.

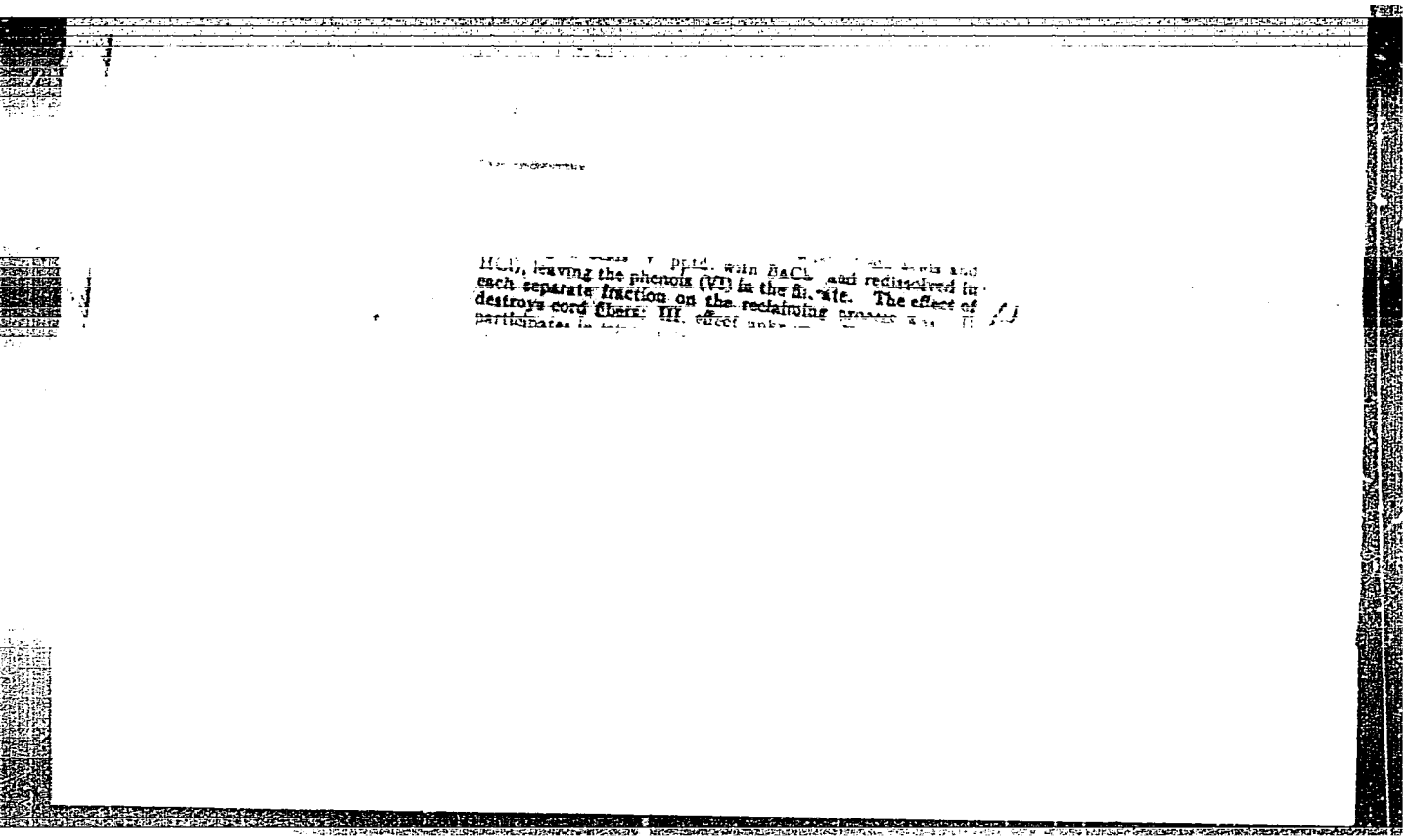
Modeling short-delay blasting. Trudy Alt. GMNII AN Kazakh. SSR 15: 38-42 '63. (MIRA 17:3)

DROZDOVSKIY, V.F.

Apparatus for the extraction of solids. Zav.lab.21 no.6:747'55.
(MLRA 8:9)

1. Regeneratnyy zavod, g. Chekhov.
(Extraction apparatus)





HCl), leaving the phenois (VI) in the filtrate. The filtrate and each separate fraction on the reclaiming [illegible] destroys cord fibers. [illegible] participates in [illegible]

SOV/138-59-4-8/26

AUTHORS: Drozdovskiy, V.F., Sokolov, S.A. and Dogadkin, B.A.

TITLE: The Effect of Sulphur-Containing Derivatives of Carbazole on the Regeneration of Rubbers (Sliyaniye serosoderzhashchikh proizvodnykh karbazola na protsess regeneratsii rezin)

PERIODICAL: Kauchuk i Rezina, 1959, Nr 4, pp 29-31 (USSR)

ABSTRACT: The addition of small quantities of activators shortens the time of regeneration of rubbers and also makes it possible to use smaller quantities of plasticizers. Various sulphur-containing compounds such as mercaptans, zinc salts of mercaptans and alkyl phenol sulphides are used as activators during the regeneration of natural and synthetic rubber vulcanisates. The Polish patent specification 35298 (1953) (Ref 6) mentions the use of a mixture of mercapto-anthracene and mercapto-carbazole. The effect of these compounds on the process of regeneration and on the vulcanization process of a mixture of SKB and NK rubbers was investigated. The rubbers were regenerated by heating them for five hours at 180°C and tested according to the standard for regenerated tyre rubbers GOST 3550-54. During the test the product obtained

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by interacting carbazole with sulphur monochloride and morpholine disulphide was used (Table 1). Literature data (Ref 7) indicate that morpholine disulphide itself acts as vulcanizing agent and also as a vulcanization accelerator. Experiments were carried out to test the effect of the product obtained by the interaction of carbazole and sulphur monochloride on the vulcanization process of natural rubber at 143°C. Results indicated that this product also acts as vulcanizing agent and vulcanizing accelerator, but is less effective than morpholine disulphide. 3-mercapto carbazole was prepared according to data given earlier (Ref 8) and its effect compared with that of "Renatsit" II (Table 2). Results showed that 3-mercapto carbazole is more active than trichlorothiophenol ("Renatsit" II). The activity of 3-thiocyanate carbazole and x,3-dithiocyanate carbazole was also tested (Table 3),

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and it was shown that purified 3-thiocyanate carbazole was equally effective as "Renatsit" II. The x,3-dirhodanate carbazole, however, was unsatisfactory.(Table 4). The authors concluded that the 3-mercapto carbazole and 3-rhodanate carbazole are satisfactory compounds to be used during the regeneration of rubbers, and their action is analogous to that of mercaptans.
There are 4 tables and 10 references, 8 of which are English, 1 Soviet and 1 Polish.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Tyre Industry Research Institute)

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S/138/60/000/006/006/008
A051/A029

AUTHOR: Drozdovskiy, V.F.

TITLE: On the Mechanism of the Reclaiming Process of Rubber (Survey)

PERIODICAL: Kauchuk i Rezina, 1960, No. 6, pp. 40 - 43

TEXT: The regeneration in rubber is a highly complex physico-chemical process due to the wide range of substances involved. It is pointed out that the main factors determining the mastication of rubber during the reclaiming process are the destruction of the three-dimensional lattice of the vulcanizate under the effect of oxygen, heat and mechanical actions on the main hydrocarbon chains and on the transverse bonds, and the partial destruction of the adsorption bonds of carbon black - rubber, carbon black-carbon black. It is assumed that during the oxidation of the vulcanizates the oxydation of the sulfur bonds is possible (Ref. 37). However, it is not known whether the oxidation of these sulfur bonds is followed by their destruction. During regeneration thermal destruction of the sulfur bonds takes place, (not only of the polysulfide, but partially also of the monosulfide. As a result of the latter, the content of the sul-

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fur transverse bonds in the reclaimed rubber decreases, and the number of intermolecular sulfur bonds increases. As a rule, the regeneration of rubbers takes place at lower temperatures than those necessary for thermal destruction of rubbers along the allyl bonds. However, the data available in the literature help to confirm the fact that thermal destruction of the rubber substance of the vulcanizate takes place during the regeneration process. It is known that in the absence of oxygen, at temperatures of up to 120°C, in rubber solutions no destruction of their molecules is noted (Refs. 38 and 39). At 145°C substances imitating the structure of rubber are not destroyed. At the same time under the effect of free radicals rubbers and substances imitating rubber structure are capable of being destroyed even at temperatures below 100°C. It is thought that the first attack of the radical is based on the removal of the hydrogen atom from the methylene group adjacent to the double bond, after which the destruction of the formed radical takes place (Ref. 43). It is stated that in the regeneration of rubber the probability of thermal decay of the hydrocarbon chains should be considerable when using alkaline, aqueous-neutral, acidic methods, etc., if there is a very slight amount of oxygen present in the

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system, (about 0.04%). It is assumed that in this case the thermal destruction of the vulcanizate surpasses the oxidizing destruction. During the mechanical processing of the devulcanized rubber evidently a mechanical rupture of the chain molecules takes place. It is assumed that by using any of the contemporary methods of long-lasting high-temperature regeneration, (even when performed in the absence of oxygen), it is impossible to produce reclaimed rubber of an exceptionally improved quality. Reclaimed rubber of somewhat better quality is obtained if the temperatures are applied during shorter periods. The quality of reclaimed rubber can be improved if it were possible to destroy both the intra- and intermolecular bonds of the vulcanizate under temperatures considerably lower than those used today. There are 45 references: 20 Soviet, 23 English and 2 French.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry).

DROZDOVSKIY, V.F.; LAVROVA, T.V.; SOKOLOV, S.A.

Effect of carboxylic acid anhydrides on the rubber reclaiming process. Kauch.i rez. 20 no.3:33-35 Mr '61. (MIRA 14:3)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Anhydrides) (Rubber, Reclaimed)

23765
S/190/61/003/006/008/019
B110/B216

11.2210

AUTHORS: Drozdovskiy, V. F., Shokhin, I. A., Klauzen, N. A.

TITLE: Decomposition of butyl rubber and its vulcanizates under the influence of Co^{60} γ-radiation

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 6, 1961, 852-860

TEXT: In the absence of oxygen, butyl rubber and its vulcanizates decompose under the influence of ionizing radiation (Co^{60} γ-radiation) similarly to polyisobutylene. The present study deals with the decomposition of butyl rubber and its filled sulfuric and unfilled sulfur-free vulcanizates under the action of Co^{60} γ-radiation in presence and absence of oxygen, the influence of radical acceptors on this process and the plastic-elastic and physicomechanical properties of the radiation regenerate. Irradiation was performed at 25°C in air and in vacuo in flat ampoules (150·14·1 mm) by a method described by the last-mentioned author (Ref. 8: Kolloidn. zh., 20, 260, 1958). Composition and properties of the vulcanizates studied are listed in Table 1. Sulfuric vulcanized rubber was swelled in solutions containing 0.238 mole/l phenyl β-naphthylamine and m-dinitro

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benzene, 0.238 and 0.12 mole/l butylphenyl disulfide, 0.17 mole/l trichloro-phenyl disulfide and 0.12 mole/l tetramethylthiuram disulfide. The sulfur-free vulcanizate was swelled in benzene containing 0.134 mole/l butylphenyl disulfide. Decomposition was determined by measurement of the relative viscosity change in 0.5 % benzene solutions. Infrared spectra in the 10-13 μ range were taken before and after irradiation with $50 \cdot 10^6$ r in air and in vacuo. After irradiation, the authors carried out osmotic and viscosimetric molecular weight measurements. and determined the modulus at 300 and 500 % elongation, the break resistance, relative elongation, and the swelling maximum in m-xylene and chloroform extract. After irradiation with $20 \cdot 10^6$ r, the sulfuric vulcanized rubber, with and without butylphenyl disulfide, was extracted with acetone and analyzed quantitatively for bound sulfur. The quality of the regenerate was tested by means of Co^{60} γ-radiation, after swelling, and its plastic-elastic properties by rolling for 2 min each in refining and mixing rolls. The value of η_{spec}/c decreases during irradiation of benzenic rubber solutions in air and in vacuo (Fig. 1). Irradiation with $20 \cdot 10^6$ r reduces the viscosimetric molecular weight, calculated according to Fox (Ref. 10: T. G. Fox, P. J. Flory: J. Phys. Coll. Chem., 53, 197, 1949), from

264,000 to 41,000. In practice, the decomposition of butyl rubber does not differ from that in oxygen. Irradiation of unfilled sulfuric and sulfur-free vulcanizates with 10, 15, and $20 \cdot 10^6$ r lowers their break resistance and somewhat increases their relative elongation. The sulfur-free vulcanizate is decomposed more rapidly than the sulfuric vulcanizate. Irradiation of filled vulcanizates leads to a lower modulus, break resistance and slightly lower relative elongation. The swelling maximum in m-xylene and chloroform extract increases. The property changes during radiation of the sulfur-free vulcanizate are very rapid. Butylphenyl disulfide had a greater influence on the decomposition of the sulfuric vulcanizate than on that of the sulfur-free vulcanizate. The presence of oxygen affects all the properties of the filled sulfuric vulcanizate more than the vacuum. In the presence of 0.238 mole/l sulfide, the sulfur content of sulfuric vulcanizate irradiated with $20 \cdot 10^6$ r increased by 0.35 % relative to vulcanizate irradiated in the absence of sulfide. A regenerate with good plastic-elastic and physicomechanical properties was obtained from vulcanizate swelled in a solution containing 0.238 mole/l sulfide and irradiated with $25 \cdot 10^6$ and $49 \cdot 10^6$ r. In practice, oxygen does not accelerate decomposition, but only affects the chemical character

of the decomposition products. Owing to formation of vinylidene groups, $RR'C=CH_2$, the infrared spectrum exhibited a band at 11.25 μ. The decomposition mechanism of butyl rubber by ionizing radiation resembles that of polyisobutylene. Sulfur-free vulcanizates decompose faster than sulfuric vulcanizates, and unfilled vulcanizates much more rapidly than filled ones. The presence of free-radical acceptors (e.g. disulfides) accelerates the decomposition of filled vulcanizates. The increased content of bound sulfur shows that addition of sulfur atoms to irradiated vulcanizate takes place. The sulfide reacts more effectively with radicals possessing free electrons at the sulfur atoms instead of the carbon atoms. Oxygen has a slight influence on the decomposition of sulfuric vulcanizates by γ-radiation. Decreased formation of branched structures in the presence of disulfide (free-radical acceptor) is assumed to be the cause of the difference in the physicomechanical properties, at equal plastic-elastic properties, of regenerates subjected to varying radiation doses. Irradiations were performed by V. T. Kozlov, coworker at the physics and chemical laboratory of the NIIShP. in the K-18000 (K-18000) apparatus of the Institute imeni Karpov. M. I. Arkhangel'skaya carried out the osmotic molecular weight determinations. There are 7 figures, 3 tables,

and 10 references: 2 Soviet-bloc and 8 non-Soviet-bloc. The three references to English-language publications read as follows: Ref. 4: R. Harrington, Nucleonics 14, No 9, 70, 1956. Ref. 5: R. L. Johnson, H. E. Adams, M. Barzan, Rubber World, 137, 73, 83, 90, 1957. Ref. 6: R. Harrington, Rubber Age, 83, 472, 1958.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of Tire Industry)

SUBMITTED: July 28, 1960

Table 1: Composition and properties of unfilled and filled butyl rubber vulcanizates. 1) composition and properties of the vulcanizates; 2) sulfuric vulcanizates; 3) sulfur-free vulcanizates; 4) unfilled; 5) filled; 6) butyl rubber; 7) stack soot; 8) furnace soot; 9) zinc oxide; 10) petrolatum; 11) stearic acid; 12) tetramethylthiuram disulfide; 13) mercapto benzothiazole; 14) p-quinone dioxime; 15) dibenzothiazole disulfide; 16) sulfur; 17) vulcanization at 151°C, min; 18) modulus at 500 % elongation, kg/cm^2; 19) break resistance, kg/cm^2; 20) relative elongation, %; 21) swelling maximum in m-xylene, %; 22) swelling maximum in benzene, %.

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[redacted]

MROZDOVSKIY, V.F.

Terminology. Kauch.i rez. 20 no.3:59 Mr '61. (MIRA 14:3)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Rubber--Terminology)

DROZDOVSKIY, V.F.; SOKOLOV, S.A.; SHOKHIN, I.A.; EYTINGON, I.I.

Activators of rubber reclaiming process. Kauch. i rez. 20 no.12:22-25 D '61. (MIRA 15:1)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Rubber, Reclaimed)

S/138/62/000/011/004/008
A051/A126

AUTHOR: Drozdovskiy, V.F.

TITLE: Sulfur-containing activators of the rubber regeneration process (A survey)

PERIODICAL: Kauchuk i rezina, no. 11, 1962, 17 - 22

TEXT: The author summarizes the various factors which influence the effectiveness of activators in the rubber regeneration process: a) the structure; b) the nature of the substance vulcanizate; c) the transverse bond type of the vulcanizate; d) the filler; e) the softener; f) oxygen; g) the medium; h) the process duration; i) concentration of the activator; j) activator toxicity; k) special features of the reclaimed rubber produced with activators. The quality of the rubber is determined by the production method. It is concluded that mercaptanes, their zinc salts and disulfides, affect not only the oxidation of the rubber, but also the oxidation of the softener. In mechanical interaction, the activators accept free radicals. There are 20 references.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

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S/138/62/000/005/005/010
A051/A126

AUTHOR: Dogadkin, B.A.; Drozdovskiy, V.F.; Tarasova, Z.N.; Arkhangel'skaya, M.I.

TITLE: Mercaptane and disulfide effect on thermal and thermo-oxidizing destruction of swollen vulcanizates

PERIODICAL: Kauchuk i rezina, no. 5, 1962, 15 - 22

TEXT: The effects of mercaptanes and disulfides on thermal destruction of swollen vulcanizates were studied. The properties of the destruction products were investigated and the substances mainly responsible for the destruction of sulfur bonds of the vulcanizates were determined. It was established that the mercaptanes and the disulfides increase the degree of thermal destruction of the swollen sulfurous vulcanizate, but do not affect the thermal destruction of the sulfurless radiation vulcanizate. Since there is no connection between the destruction rates of the vulcanizate and the oxidation of the solvent in the presence of mercaptanes and disulfides, it is assumed that the rate of the thermo-oxidizing destruction is determined by the effectiveness of the radicals formed.

capable of removing hydrogen atoms from the rubber substance of the vulcanizate. Experimental findings led to the following conclusions: Aromatic and aliphatic mercaptanes and disulfides increase the degree of thermal destruction of the vulcanizate based on SKS-30A rubber. The derivatives of the aromatic row (trichlorothiophenol, β-thionaphthal, disulfide β-thionaphthal and disulfide n--tertiary-butylphenol) are more active than the derivatives of the fatty row (dodecylmercaptane and its sulfide). The mercaptanes are more active than the corresponding disulfides. The trichlorothiophenol, dodecylmercaptane and the disulfide n-tertiary-butylphenol do not noticeably affect the thermal destruction at 180°C of the sulfurless radiation vulcanizate, based on SKS-30A rubber. The rate of the thermo-oxidizing destruction of the vulcanizate depends on the nature of the mercaptanes and the disulfides and that of the solvent. At a constant concentration of oxygen in the system, with a shift of the temperature beyond a certain limit, a reversion of the thermo-oxidizing destruction is noted. The destruction reversion is slowed down in the presence of mercaptanes and disulfides. By comparing the data on the rates of oxidation of the mercaptanes and solvents with that of the thermo-oxidizing destruction of the sulfurous vulcanizate, it is seen that a direct relation between them is not always noted.

Mercaptane and disulfide effect on thermal and S/138/62/000/005/005/010
A051/A126

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

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